

INDIVIDUALIZED INSTRUCTION IN
THE STATE HIGH SCHOOL

by

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INTRODUCTION

The variability of the needs of pupils has led to the establishment of schools for fostering and developing the individual abilities providing for their needs.

The methods employed in reaching this objective have varied with the type and function of the different institutions. No matter what the method has been nor how well the plan has succeeded, one thing that can be agreed upon is that the whole plan of education is to provide for the welfare of the child and through him society.

Free education has given to this country an exceedingly large number of schools. These schools have been so distributed that they have provided educational opportunities for all, even those in the more sparsely populated and isolated areas. This has been true of the secondary school as well. Kansas, which is largely rural has many small high schools ministering to the educational needs of its young people.

Because of the isolated nature of the small high school, improvements come slowly; and those that are made are often imitations of those worked out for the larger institutions.

Due to the slow progress being made in this field, it seemed desirable to prepare a plan of instruction which would increase the opportunities for learning through the utilization of whatever resources this type of school might have.

REVIEW OF LITERATURE

There has been an increasing demand by students of secondary education to have the course of study enriched, and the subject matter more closely related to the experiences of the student in his every day life. Every student should, as far as possible, be provided an opportunity to develop along any line in which he shows promise of making a contribution to his own well being or to the well being of society. In 1931, the committee on pupil promotion problems of the Department of Superintendence stated:

The school should make greater effort to discover high points in every pupil, rather than level them down and lose them in general averages. --- More cultivation should be given to whatever even slightly useful traits a pupil may have in the hope that these may be developed into a contribution to society and to the individual himself. (4, p. 111).

In larger schools, acceptance of this idea is evidenced by the rapid growth of the home room, where more individual attention can be given by the teacher, and where the student's abilities and short comings, his likes and dislikes can be discovered. Another trend is toward the abolition of the system of classification by grades. Gerling (7, p. 104), urged teachers to acquire the habit of judging the accomplishments of any pupil, bright or dull, on the basis of individual ability and not by comparison with the work of average pupils or grade norms.

Continuous efforts have been made to link the work of the school with the home. The work in vocational agriculture and home economics has probably been carried further in this respect than

in other areas. However, isolated instances of this type of work being done in various other areas of subject matter have been brought to the attention of the public. Alderman (1) reported on many home projects that were carried out over a period of years in the state of Nebraska.

All of this points to the need of a plan for individualized instruction, with the added task of providing that kind of instruction for students of the rural communities. Brim called attention to the fact that the rural community has need of some special planning when he said:

The general objectives of rural education do not differ from objectives of urban education on the same level. Both are concerned in realizing the maximal individual growth and self-expression and in promoting greater social well-being and progress through the oncoming generations. Its responsibilities are to the child and to society as a whole, not to the local group, whose children it is educating. The specific objectives, however, the means by which the larger objectives are attained, will, since they are determined by the resources, experiences, and needs of rural children, be peculiar in part to rural life. (3, p. 260).

The rural school curriculum should be conceived in terms of a succession of experiences and enterprises having a maximum of life-likeness for the learner. Brim (3, p. 262) stated: "The rural school should take on the nature of a laboratory where children become participators in activities, and answer seekers rather than answer learners".

To do this, the teacher must become an assistant to the student in arranging activities and materials in such a way that he will be led into an acquisition of valuable facts, helpful skills, and proper attitudes and appreciations, through the result of his own initiative.

The teacher in the small high school, while handicapped in many ways, has some things to his advantage in developing an individualized program. In the first place he is dealing with smaller numbers and his instruction approaches that which would be classed as individual. In the second place he is very intimately associated with the lives of his pupils.

Much research has been done in the field of individualized instruction. Many school systems, most notable of which are the ones at Dalton, Massachusetts and Winnetka, Illinois, have been built on this principle (12).

This review shows that the small high school is in line for an improved program, that this program should be peculiarly adapted to the needs of rural pupils, and that the most likely improvement should be reached through the use of an individualized program of instruction.

GENERAL PLAN

Since an individualized plan of instruction seemed to offer the greatest possibilities, it was decided to prepare such a program and to test it in the Penalosa High School which had an enrollment of 26 and employed three teachers.

In a small community any change in the school program must be made cautiously. To have it disapproved by the students or patrons at the very beginning might prove disastrous. It must also conform to the regulations of the State Board of Education. An effort was made, therefore, to adapt the program to the one already in use. The general idea was to supplement ordinary class work with individual projects for which credit might be earned.

Since it was felt that the individualized plan of instruction would not work equally well in all subject fields, it was necessary to select the ones in which to work. After careful consideration five fields were chosen. They were agriculture, clothing, general shop, music, and an integrated course in English.

No appreciable change was to be made in the content of any of these courses except English. This class was open to all students of the junior and senior classes; in fact, all of the students of these two classes were enrolled. Because of this it was decided to make the choice, preparation, and presentation of the junior and senior class plays a part of the regular class work. Also included as a part of their work was the editing, printing, and distributing of the school paper. This paper, "The Echo" was to be

published each month during the school year. The part of the course devoted to the study of literature was to be kept as in former courses. Thus it was felt that the burden of the small school's limited teaching force would be eased by making curricular what formerly had been three heavy extra-curricular activities, and that opportunity would be afforded in the course for the practical expression of both written and spoken English.

The individualized program of instruction was now ready for introduction into the program of the school.

INTRODUCTION

In September 1939, the individualized program of instruction was introduced into the small high school at Penelope, Kansas. It was explained to the students and teachers, and later thoroughly discussed with the teachers in a special meeting. A set of general rules was drawn up so that the pupils and teachers would have a permanent guide in interpreting the program. These rules listed the subject fields of work to be included, the time that could be counted, the proposed plan for crediting work, and other items.

At the beginning of the second year these rules were changed somewhat. The changes were made to overcome certain difficulties, errors, and shortcomings which appeared as the program developed. One change was to increase the hour requirement for credit in subjects which did not include a regular recitation or laboratory period. The revised rules, including the subjects added the second year of the program were posted as follows:

Outline of General Rules

Some general statements, rules, and regulations regarding the operation of the school's individualized instruction program.

1. While the subject matter in all classes will be liberalized as much as possible, integrated courses have been outlined in agriculture and general science for students of the ninth and tenth grades, and in English III and English IV for those of the eleventh and twelfth grades.

2. Progress cards will be used in the following fields of work:

Music
Agriculture
General Science
General Shop
Foods

Clothing
English III
English IV
Physical Education

3. The following times in addition to those spent in the classroom, may be counted on the progress cards:

Before nine o'clock
After four o'clock
At the noon period
At the home in the evenings
During study hall periods
On Saturdays
During vacation periods

4. Where progress cards are used, in fields of work which include a regular recitation or laboratory period, credit will be given on the basis of the following schedule:

| | |
|--------------------------------|--------------|
| Forty-five hours | 1/4 credit |
| Ninety hours | 1/2 credit |
| One hundred, thirty-five hours | 3/4 credit |
| One hundred, eighty hours | 1 credit |
| Two hundred, eighty hours | 1 1/2 credit |
| Three hundred, sixty hours | 2 credits |

5. In fields of work which do not include a regular recitation or laboratory period, one-half of the number of hours should be added to the above schedule.

6. In addition to the time recorded on the progress cards, other contributing factors in determining credit will be a test grade over factual material, regular class room grades, and general attitude toward the work as observed by the teacher in charge.

7. In subjects where progress cards are used, the grade on the student's grade card will be determined as in any other subject.

8. Home work assignments may be secured in any subject where progress cards are used. They must be agreed to by parent and teacher. Assignment and report blanks are provided for this purpose.

9. Students may continue project work for credit in completed subjects where progress cards have been used provided, a "C" average grade was made in the subject when taken.

10. Provision has been made for a continuation of the individualized instruction program beyond the regular high school period, by the use of "Supervised Correspondence Study" courses arranged through the extension division of the University of Nebraska.

It can be seen that the general idea of the plan was to open, in these five fields, an opportunity for each student to go as far as time and his own initiative would permit. He was to be allowed to read, study, work, and observe as much as he wished with the understanding that his efforts were to be interpreted in terms of added school credit in the subject he was taking.

In order that the teacher might be cognizant of the efforts

the student was putting forth, a progress card was provided which would show the nature of the effort and the time spent.

The carrying out of the program was now, to a great extent, in the hands of the various teachers. They were furnished with progress cards and with assignment and report blanks. A sample of each of these appears in the appendix of this study.

In order to get clearly before the students the plan of procedure, the teachers were asked to make suggested outlines of the activities which were related to their particular courses and which had sufficient educational value to warrant their being recorded on the progress cards. As the program developed students often asked permission to record time for work they had done or were planning to do. In considering the requests the teacher was furnished with information for revising and expanding his outlines. The outlines as finally evolved and posted for the various subjects are given below.

Outlines of Fields of Subject Matter

The general field of subject matter and activities which will be included in an integrated course in clothing.

I. Regular class work

1. Recitation
 - a. Text book assignments
 - b. Reports on special assignments
2. Laboratory work
 - a. Regular sewing periods
 - b. Extra time under teacher supervision
 - c. Note book work

II. Home work

1. Garment making under supervision
2. Alteration and repair work
3. Work on school assigned projects

4. Fancy work
 - a. Crocheting
 - b. Quilting
 - c. Knitting
 - d. Embroidering
6. Sewing in connection with club work, fair exhibits, etc.

III. Miscellaneous

1. Pattern selection, alteration and use
2. Reading in connection with fashions, home decoration, etc.
3. Study for and taking of various types of clothing tests

The general field of subject matter and activities which will be included in an integrated course in general shop.

I. Repair work within the home

1. Repairing old furniture
2. Upholstering
3. Painting and varnishing
4. Papering

II. Work on equipment about the farm

1. Repair machinery
2. Making feeding equipment
3. Work on tractor trucks, etc.
4. Fencing

III. General carpentry work

1. Work on new buildings
2. Repair on old buildings
3. Concrete work

IV. Work on school grounds and equipments

1. Ball grounds, tennis court, etc.
2. School furniture repairing
3. Building stage settings, etc.

V. Work within the school shop

1. Required exercises
2. Regular shop projects
3. Lectures and recitations
4. Drawing work as required
5. Drawing work as requested in the community

The general field of subject matter and activities which will be included in an integrated course in agriculture.

I. Regular class work

1. Recitation
 - a. Textbook assignments
 - b. Study of agriculture bulletins
 - c. Reports on articles from farm magazines

4. Fancy work
 - a. Crocheting
 - b. Quilting
 - c. Knitting
 - d. Embroidering
5. Sewing in connection with club work, fair exhibits, etc.

III. Miscellaneous

1. Pattern selection, alteration and use
2. Reading in connection with fashions, home decoration, etc.
3. Study for and taking of various types of clothing tests

The general field of subject matter and activities which will be included in an integrated course in general shop.

I. Repair work within the home

1. Repairing old furniture
2. Upholstering
3. Painting and varnishing
4. Papering

II. Work on equipment about the farm

1. Repair machinery
2. Making feeding equipment
3. Work on tractor trucks, etc.
4. Fencing

III. General carpentry work

1. Work on new buildings
2. Repair on old buildings
3. Concrete work

IV. Work on school grounds and equipments

1. Ball grounds, tennis court, etc.
2. School furniture repairing
3. Building stage settings, etc.

V. Work within the school shop

1. Required exercises
2. Regular shop projects
3. Lectures and recitations
4. Drawing work as required
5. Drawing work as requested in the community

The general field of subject matter and activities which will be included in an integrated course in agriculture.

I. Regular class work

1. Recitation
 - a. Textbook assignments
 - b. Study of agriculture bulletins
 - c. Reports on articles from farm magazines

2. Class room laboratory work
 - a. Seed testing
 - b. Soil analysis
 - c. Milk and cream testing
 - d. Chart making
 - e. Work with microscope
- II. Work on school ground
 1. Tree flower and shrubbery planting
 2. Caring for the trees, etc.
 3. Clean up work
 4. Work on play grounds
- III. Poultry
 1. Poultry brooding
 2. Work in poultry feeding
 3. Bookkeeping on poultry project
 4. Care of equipment
- IV. Feeds and feeding
 1. Study of the values of feeding materials
 2. Formula making
 3. Feed mixing
 4. Feed costs
- V. Hotbed
 1. Planning
 2. Building
 3. Planting
 4. Care of plants
 5. Distribution of plants
- VI. Home activities (provided for by home work assignments)
 1. Care of livestock
 2. Poultry projects
 3. Garden and flowers
 4. Improvement and care of the lawn

The general field of subject matter and activities which will be included in an integrated course in music.

- I. Regular music work provided by the school
 1. Class room work
 2. Regular meetings of music groups
- II. Private music lessons
 1. Vocal
 2. Instrumental
- III. Music practice
 1. Private lessons
 2. Special music in school and community
 3. Instrumental

IV. Accompanying

1. For school groups
2. For churches, clubs, etc.

V. Taking part in music programs

1. Operetta recitals, etc.
2. Choir work and music programs at churches
3. Band and orchestra concerts

VI. Attendance at music programs

1. Operas, operettas, etc.
2. Programs by noted musicians
3. Band and orchestra concerts

The general field of subject matter and activities which will be included in an integrated course in general science.

I. Note book work

1. Science articles
2. Science pictures
3. Pictures of noted scientists
4. Sketches made by the student
5. Charts and tables
6. Write-up of experiments
7. Samples of leaves, cloth, flowers, etc.
8. Kodak pictures
9. Home planning diagrams, pictures, etc.
10. Reports of visits, travels and field trips
11. Making a classified scientific bibliography

III. Visits to places of scientific interest

1. Places in nature
2. Factories
3. Laboratories
4. Power plants
5. Observatories
6. Doctors and dentists offices and laboratories
7. Stores
8. Dairies, creameries, ice cream plants, etc.
9. Hospitals
10. Fire and police stations
11. Refrigeration and ice plants
12. Greenhouses

IV. Experimentation

1. In the laboratories
2. At home

V. Plant life

1. Germination experiments
2. Microscopic study of plant structure
3. Budding and grafting
4. Pollination experimentation
5. Growing flowers, plants, shrubs

- VI. Health activities
 - 1. Practicing good health habits
 - 2. Consultations with doctors, nurses, etc.
 - 3. Collection of bulletins and reading of health articles
- VII. Work with the microscope
 - 1. Study of microscopic specimens
 - 2. Sketching magnified objects
- VIII. Photography
 - 1. Picture taking
 - 2. Developing and printing
 - 3. Enlarging and color work
- IX. Astronomy
 - 1. Study of the heavens and heavenly bodies
 - 2. Charting the constellations
 - 3. Constructing and using telescope
- X. Weather and climate
 - 1. Keeping weather records over periods of time
 - 2. Making, setting up, and reading weather instruments
 - 3. Making and setting up a sun dial
- XI. Field trips
 - 1. Study of soils and water
 - 2. Study of wild life
 - a. Animal
 - b. Plant
 - c. Insect
 - 3. Study of the effects of erosion
- XII. Scientific library
 - 1. Build science shelf in the school library
 - 2. Build science library at home
 - a. Collect material
 - b. Classify and index in usable form
 - c. Make a hand book of formulae, recipes, etc.

The general field of subject matter and activities which will be included in the field of physical education.

- I. Regular class periods
 - 1. Gymnastics
 - 2. Games
- II. Athletics
 - 1. Softball practice
 - 2. Softball games
 - 3. Basketball practice
 - 4. Basketball games

- 5. Tennis practice
- 6. Tennis games
- 7. Intramural athletic activities

III. Rules of the various sports

- 1. Study of rules
- 2. Attending lectures and rule interpretations

IV. Health

- 1. Bathing
- 2. Care of injuries

V. Equipment

- 1. Laundry, cleaning, and care of suits and athletic uniforms
- 2. Repair of athletic equipment

VI. Miscellaneous

- 1. Reading sports magazines
- 2. Officiating
- 3. Taking part in organized games, hikes, etc.

The general field of subject matter and activities which will be included in an integrated course in foods.

I. Regular class work

- 1. Recitation
 - a. Text book assignments
 - b. Reports on special assignments
- 2. Laboratory work
 - a. Regular cooking periods
 - b. Preparation and serving of meals, banquets, etc., under teacher's supervision
 - c. Note book work

II. Home work

- 1. Preparing dishes studied in class
- 2. Baking work under supervision of parent
- 3. Preparing and serving of meals for definite periods of time
- 4. Work done in connection with school lunches
- 5. Canning and baking in connection with club work, fair exhibits, etc.

III. Miscellaneous

- 1. Making a collection of recipes
- 2. Reading in connection with foods, diets, serving, etc.
- 3. Studying for food tests
- 4. Writing on food tests

The general field of subject matter and activities which will be included in an integrated course in English III and English IV.

- I. Dramatics
 1. Junior play (memorization and practice)
 2. Senior play (memorization and practice)
 3. Lesson preparation and recitation on plays
- II. Literature
 1. Lesson preparation and recitation on the lives of authors. Study of their writings
 2. The writing of articles on the lives of authors
- III. Typing and stencil work
 1. School newspaper work
 2. Program printing
 - a. School and community plays
 - b. Clubs
 - c. Church and church organizations
 - d. Community entertainments
 3. Blanks and forms
 - a. For school administration
 - b. For business firms
 - c. For the city
 4. Advertising
- IV. Art work
 1. Front page for the paper
 2. Special headings in the paper
 3. Advertising
 4. Sale bills
 5. Sign making
- V. Grammar and composition
 1. Writing for the paper
 2. Correlation with other subject matter
 3. Spelling and dictionary work
- VI. Business procedure
 1. Securing subscriptions
 2. Ordering material for the class
 3. Collecting and keeping record of commercial advertising
 4. Collection and care of funds
 5. Payment of bills
 6. Care of equipment
 7. Distribution of papers

List of Types of Activities

A blank space was provided on the progress cards for the inclusion of activities related to the subject. The teachers were asked to provide this list for their particular classes. It was

expected that this would help them have a better understanding of the work the student was doing. It was made to correspond in a general way with the outline of activities for the same subject. These lists of activities, as taken from the progress cards used in the various subjects follow.

Headings Used for Types of Activity on Progress Cards.

English III

Dramatics
Literature
Typing and stencil work
Art work
Grammar
Business procedure
Miscellaneous

General Shop

Drawing
Woodwork
Home projects
Extra time
Miscellaneous

General Science

Class work
Note book
Experiments
Trips and visits
Health
Scientific reading
Miscellaneous

Food

Recitation
Laboratory
Home projects
Special activities
Meal preparation
Home practice
Miscellaneous

English IV

Literature
Dramatics
School paper
Art and stencil
Business
Miscellaneous

- Agriculture
 - Recitation
 - Laboratory
 - Reports
 - Extra work
 - Home projects
 - Miscellaneous

- Clothing
 - Regular class work
 - Extra school time
 - Note book work
 - Home work
 - Miscellaneous

- Music
 - Glee club
 - Orchestra
 - Operetta
 - Music lessons
 - Music practice
 - Special music
 - Miscellaneous

- Physical education
 - Soft ball
 - Basket ball
 - Tennis
 - Supervised games
 - Organized hikes
 - Bathing
 - Other activities

Most of the questions which arose regarding the outside work came from the failure of both students and teachers to comprehend the scope of activities that might be considered in counting time on their progress cards. In discussing these questions, an effort was made to encourage the student to broaden his educational activities as much as possible.

The progress cards were collected regularly at the end of each six weeks period. The time was totaled and credited to each student.

As the end of the school year approached, it appeared that it might be of value to compare the accumulated time with the students'

knowledge of the subject matter and also with his intelligence quotient. For this reason, the Shrammel-Revised Army Alpha Intelligence Tests were given to all students, and the Emporia Every Pupil Scholarship Tests were given in all subjects except music. In that subject the Strouse Music Test was given.

At the end of the year the school principal in consultation with the teacher of the subject, granted credit for the year. This credit was based upon three factors: time, test scores, and general attitude toward the work.

RESULTS AFTER THE FIRST YEAR

The time, test scores, school grades, intelligence quotient, and credit given each student in the five subjects covered by the program for the school year 1936-40 are given in tables 1 to 5.

Table 1. Summary of accumulated time, test scores, school grades, intelligence quotients, and school credits made by the students in English I.

| Student No. | Hours | Test score | School grade | I.Q. | School Credit |
|-------------|-------|------------|--------------|------|---------------|
| 1 | 243.3 | 71.5 | C | 109 | 1 |
| 2 | 214.4 | 110.0 | A | 131 | 1 |
| 3 | 204.9 | 55.5 | D- | 99 | 1 |
| 4 | 203.9 | 68.5 | B | 110 | 1 |
| 5 | 196.5 | 46.0 | C- | 99 | 1 |
| 6 | 195.6 | 40.5 | C- | 93 | 1 |
| 7 | 194.1 | 89.0 | A- | 119 | 1 |
| 8 | 193.0 | 80.5 | B+ | 127 | 1 |
| 9 | 186.1 | 46.5 | D | 99 | 1 |
| 10 | 184.3 | 72.0 | C- | 122 | 1 |
| 11 | 180.4 | 91.5 | B+ | 127 | 1 |

Table 2. Summary of accumulated time, test scores, school grades, intelligence quotient, and school credits made by the students in clothing.

| Student No. | Hours | Test Score | School Grade | I.Q. | School Credit |
|-------------|-------|------------|--------------|------|---------------|
| 1 | 270.9 | 118 | B+ | 119 | 1½ |
| 2 | 244.4 | 130 | A | 127 | 1½ |
| 3 | 235.3 | 95 | C+ | 99 | 1½ |
| 4 | 229.5 | 116 | B+ | 116 | 1½ |
| 5 | 227.1 | 117 | B | 122 | 1½ |
| 6 | 197.1 | 119 | B | 110 | 1 |

Table 3. Summary of accumulated time, test scores, intelligence quotients, and school credits made by the students in music.

| Student No. | Hours | Test Scores | I.Q. | School Credit |
|-------------|-------|-------------|------|---------------|
| 1 | 158.4 | 118 | 131 | 3/4 |
| 2 | 154.9 | 92 | 110 | 3/4 |
| 3 | 154.8 | 95 | 118 | 3/4 |
| 4 | 130.9 | 104 | 129 | 3/4 |
| 5 | 117.2 | 96 | 122 | 1/2 |
| 6 | 113.2 | 103 | 127 | 1/2 |
| 7 | 103.3 | 83 | 130 | 1/2 |
| 8 | 96.5 | 98 | 93 | 1/2 |
| 9 | 91.5 | 65 | 113 | 1/2 |
| 10 | 88.6 | 83 | 116 | 1/2 |
| 11 | 79.8 | 84 | 126 | 1/4 |
| 12 | 76.7 | 65 | 99 | 1/4 |

Table 3 (concl.)

| Student No. | Hours | Test Scores | I.Q. | School Credit |
|-------------|-------|-------------|------|---------------|
| 13 | 75.2 | 65 | 93 | 1/4 |
| 14 | 66.6 | 49 | 99 | 1/4 |
| 15 | 64.2 | 69 | 93 | 1/4 |
| 16 | 60.5 | 49 | 116 | 1/4 |
| 17 | 59.8 | 104 | 119 | 1/4 |
| 18 | 55.8 | 74 | 116 | 1/4 |
| 19 | 51.0 | 57 | 99 | 1/4 |
| 20 | 50.7 | 86 | 119 | 1/4 |
| 21 | 46.0 | 101 | 127 | 1/4 |
| 22 | 34.0 | 80 | 109 | 0 |

Table 4. Summary of accumulated time, test scores, school grades, intelligence quotients, and school credits made by the students in agriculture.

| Student No. | Hours | Test Score | School Grade | I.Q. | School Credit |
|-------------|-------|------------|--------------|------|---------------|
| 1 | 245.9 | 100 | A- | 126 | 1 1/4 |
| 2 | 230.3 | 94 | B- | 130 | 1 1/4 |
| 3 | 210.4 | 96 | A- | 116 | 1 |
| 4 | 206.0 | 99 | A- | 115 | 1 |
| 5 | 201.0 | 84 | B | 118 | 1 |
| 6 | 190.4 | 98 | A | 129 | 1 |
| 7 | 177.3 | 80 | B | 119 | 1 |
| 8 | 175.2 | 85 | A- | 116 | 1 |
| 9 | 175.2 | 65 | D+ | 93 | 1 |
| 10 | 173.4 | 73 | C | 107 | 1 |

Table 5. Summary of accumulated time, test scores, school grades, intelligence quotients, and school credits made by the students in general shop.

| Student No. | Hours | Test Score | School Grade | I.Q. | School Credit |
|-------------|-------|------------|--------------|------|---------------|
| 1 | 275.7 | 86 | A | 93 | 1 1/2 |
| 2 | 200.6 | 98 | B | 109 | 1 |
| 3 | 186.8 | 81 | B | 93 | 1 |
| 4 | 174.7 | 66 | C | 99 | 1 |
| 5 | 167.3 | 73 | C | 99 | 1 |

A study of these tables with regard to the time element is very interesting. In Table 1, there is a range of 62.9 hours. This difference is accounted for by a more or less uniform step rise from the lowest to the highest. Student number 11 with 180.4 hours to his credit has what should have been earned by putting one hour each day on the subject. His school grade of B plus would indicate that this student did very creditable work, but was content to not spend any more than the allotted time on it. A lack of uniformity in the various other measurements of these students is quite noticeable.

In Table 2, there is an even larger range than in Table 1. Student number 1 put in 82.8 more hours than did student number 6. The difference between numbers 5 and 1, however, is only 82.8 hours. Five of these students worked an extra amount of time, and one was content to spend little more than the minimum required. They all did very creditable work according to their school grades.

There is plenty of evidence in Table 3 to show why all students should not share equally in receiving credit in music. Student number 1 put in over 120 hours more time than the lowest in the list. Several of these students put in nearly as much time on their music as they did on their regular academic subjects.

Two students showed a considerable accumulation of time in agriculture. Time for the other eight was more nearly the same. As the school grades indicate, this class had in it a very good group of students.

Student number 1 (Table 5) was 75 hours above the next one below. He had a good school grade, but a low intelligence quotient. Students numbers 4 and 5 seemed to be too low in accumulated time. This might indicate the need of deducting credit in the case of not meeting the minimum.

RESULTS YEAR ONE SECOND YEAR

For the second year of the study the Penalosa High School opened the school year (1940-41) with an enrollment of only 16. This decrease was the result of having graduated a class of nine the previous spring which was replaced by an incoming class of three; also of having had one family move out of the state. Since a study of this kind has added value if extended beyond the period of enthusiastic beginning, it was decided to continue the study. The problems caused by smaller numbers and a consequent lessened enthusiasm would subject the program to an even more rigid test.

The subject field was changed somewhat, because of subject alternations, and physical education was added. The subjects this year included general science, foods, music, physical education, general shop, and an integrated course in English.

Another change that was made dealt with providing tests in connection with the factual material in each subject field. In a number of these subjects, there was such a possibility of variation in what was taught, that it did not seem possible to secure prepared tests which would measure what a student should know in terms of what he was in a position to learn. Therefore, the teachers were asked to do two things: they were to provide for each student an outline of the factual knowledge he would be expected to know, and they were also to prepare and give a test over the material. This test was to be so made that a score of

100 would represent the grade of an average "B" student. This test score was to be used together with the progress card record in determining school credit. Samples of these outlines and tests are in the appendix.

Tables 6 to 11 show the time, test scores, school grades, and credits given each student in the six subjects covered by the program for the school year 1940-'41.

Table 6. Summary of accumulated time, test scores, school grades, and school credits made by the students in English III.

| Student No. | Hours | Test Score | School Grade | School Credit |
|-------------|-------|------------|--------------|---------------|
| 1 | 179.5 | 86 | B+ | 1 |
| 2 | 174.3 | 55 | D- | 1 |
| 3 | 164.8 | 118 | A- | 1 1/2 |
| 4 | 163.7 | 98 | B- | 1 |
| 5 | 153.1 | 71 | B | 1 |
| 6 | 151.5 | 50 | D | 1 |
| 7 | 149.8 | 87 | B- | 1 |

Table 7. Summary of accumulated time, test scores, school grades, and school credits made by the students in foods.

| Student No. | Hours | Test Score | School Grade | School Credit |
|-------------|-------|------------|--------------|---------------|
| 1 | 409.2 | 114 | B | 1 1/2 |
| 2 | 259.9 | 88 | C+ | 1 1/4 |
| 3 | 216.7 | 102 | B | 1 |
| 4 | 196.7 | 108 | A- | 1 |

Table 7 (concl.)

| Student No. | Hours | Test Score | School Grade | School Credit |
|-------------|-------|------------|--------------|---------------|
| 5 | 177.6 | 106 | B | 1 |
| 6 | 177.0 | 90 | C + | 1 |
| 7 | 176.5 | 116 | B + | 1 |
| 8 | 175.0 | 98 | B | 1 |
| 9 | 171.0 | 110 | A- | 1 |

Table 8. Summary of accumulated time, test scores, school grades, and school credit made by the students in general science.

| Student No. | Hours | Test Score | School Grade | School Credit |
|-------------|-------|------------|--------------|---------------|
| 1 | 232.7 | 98 | D + | 1 |
| 2 | 217.8 | 106 | B + | 1 1/4 |
| 3 | 205.2 | 109 | B + | 1 |
| 4 | 200.9 | 68 | D | 1 |
| 5 | 195.0 | 84 | C | 1 |
| 6 | 186.0 | 105 | C + | 1 |
| 7 | 178.0 | 82 | C- | 1 |
| 8 | 171.4 | 96 | D | 1 |

Table 9. Summary of accumulated time, test scores, school grades, and school credits made by the students in general shop.

| Student No. | Hours | Test Score | School Grade | School Credit |
|-------------|-------|------------|--------------|---------------|
| 1 | 178.7 | 101 | B + | 1 |
| 2 | 174.9 | 83 | B + | 1 |
| 3 | 164.9 | 94 | B | 1 |
| 4 | 153.2 | 98 | B + | 1 |

Table 10. Summary of accumulated hours, test scores, and school credits made by the student in music.

| Student No. | Hours | Test Score | School Credit |
|-------------|-------|------------|---------------|
| 1 | 132.0 | 105 | 1/4 |
| 2 | 125.9 | 111 | 1/2 |
| 3 | 118.8 | 111 | 1/2 |
| 4 | 94.7 | 99 | 1/4 |
| 5 | 93.8 | 112 | 1/4 |
| 6 | 89.7 | 108 | 1/4 |
| 7 | 88.9 | 118 | 1/4 |
| 8 | 87.5 | 89 | 1/4 |
| 9 | 77.4 | 99 | 1/4 |
| 10 | 70.4 | 93 | 1/4 |
| 11 | 68.9 | 111 | 1/4 |
| 12 | 58.9 | 96 | 0 |
| 13 | 54.0 | 115 | 0 |
| 14 | 44.9 | 90 | 0 |
| 15 | 36.3 | 105 | 0 |
| 16 | 22.7 | 102 | 0 |

Table 11. Summary of accumulated hours, test scores, and school credits made by the students in physical education.

| Student No. | Hours | Test Scores | School Credit |
|-------------|-------|-------------|---------------|
| 1 | 156.7 | 91 | 1/2 |
| 2 | 146.1 | 93 | 1/2 |
| 3 | 138.4 | 93 | 1/2 |
| 4 | 135.0 | 106 | 1/2 |
| 5 | 134.3 | 93 | 1/2 |
| 6 | 133.6 | 97 | 1/2 |
| 7 | 111.5 | 106 | 1/2 |
| 8 | 106.0 | 90 | 1/4 |
| 9 | 101.5 | 91 | 1/4 |
| 10 | 99.9 | 106 | 1/4 |
| 11 | 98.7 | 81 | 1/4 |
| 12 | 97.0 | 100 | 1/4 |
| 13 | 95.1 | 109 | 1/4 |
| 14 | 86.0 | 93 | 1/4 |
| 15 | 53.3 | 85 | 0 |
| 16 | 43.7 | 96 | 0 |

It is to be noted that the test scores in Tables 8 to 11 are those from tests which were so made that an average student should score about 100. This makes it easier to visualize the comparative abilities of the different students.

Table 6 shows low test scores for all except students numbers 3 and 4. The score made by student number 3 is very high. The accumulated time for this group seems low, but is accounted for by the fact that the class period was only 45 minutes long.

Student number 1 in Table 7 had 409.2 hours. This is more than two hours for each day spent in the course. The test scores in this course were very good as six of the nine run over 100.

There is nothing unusual about the class covered by Table 8. Test scores and school grades would indicate that there were both good and poor students in this group.

Four students made up the class in general shop (Table 9). They were of equal ability and put in about the same amount of time.

Tables 10 and 11 again show the great range of hours in these fields where there is not a regular class or laboratory period. These were the first credits to be given in physical education in this school that were based upon a definite plan.

RESULTS FROM TWO YEARS

In this study it was desired to determine (1) whether or not relationship existed between the amount of time a student devoted to a subject and the amount he learned about it; and (2) whether it was the students of higher intelligence who put in more time on school subjects, or whether the less intelligent ones did. For these reasons, the correlations which appear in Table 12 have been worked out.

Table 12. Correlation summary of hours and test scores, hours and I.Q., and test scores and I.Q.

| Subject | Year | Hours and Test Scores | Hours and I.Q. | Test Scores and I.Q. |
|--------------|----------|--------------------------|-------------------|-------------------------|
| English | 1939-'40 | _.100±.21 | _.640±.13 | .950±.02 |
| Agriculture | 1939-'40 | .797±.08 | .785±.08 | .494±.17 |
| Music | 1939-'40 | .444±.12 | .355±.13 | .672±.08 |
| Foods | 1940-'41 | _.130±.25 | | |
| Music | 1940-'41 | .280±.16 | | |
| Physical Ed. | 1940-'41 | _.217±.23 | | |

A study of the correlations in Table 12 is not particularly revealing. In nearly all cases the probable error is so large that the correlation coefficient carries no significance. The large probable errors are due to the small number of measures. In such a small school this could not be otherwise.

The highest degree of correlation, for any group holds in the case of I.Q. and test scores. This is to be expected since the

better pupils would naturally produce the better scores. The highest coefficient for this group was obtained in English. The test used in this case was an Emporia Every Pupil Test. It was not a very satisfactory test for the subject as it was taught, since so much was included in the course that was not covered by the test. Thus the better test scores did not depend so much on what had been learned in the course as it did upon general intelligence. The correlation in music was also rather high. Here, as in English, the test was not closely related to the music work which the school could offer. The difficulties encountered in this testing led to the plan, the second year, of having each teacher prepare his own test.

The relationship existing between I.Q. and hours seems to vary from a reasonably high correlation in the case of agriculture to almost as high a negative correlation in English. Apparently, the students of higher intelligence were interested in agriculture and spent more time on it, and those of lower intelligence found a great deal in English on which to spend time. These examples would indicate that energy and a willingness to do is not necessarily associated with higher intelligence more than it is with lower intelligence.

Correlation in the case of accumulated hours and test scores failed to reveal anything consistent. In agriculture, the only subject in which the probable error is not enough to destroy its validity, there is a definite correlation. Any belief that may have been held that interest in a subject, time spent on the subject, and knowledge of the subject were related is not definitely

upheld by this group of correlations. Improved tests and better planning might bring about different results.

Results on Credits

For the two years that the program has been in operation, 21 $\frac{3}{4}$ extra credits have been given to the 42 students enrolled. This was on the average about one-half credit per student and distributed over eight subjects.

A general analysis of the credits earned in each of the subjects should be of value.

The only student in English IV, Table 1, who earned extra credit was number 1. This was based on extra hours and a good attitude in carrying out the work in connection with the school paper. This student was only average in scholarship but his interest in the school paper was, to quite an extent, responsible for its success.

The class in clothing shown in Table 2 was perhaps one of the best examples of a small but enthusiastic group. All of the members of the class except number 6 put in an appreciable number of extra hours with a consequent number of extra credits. Student number 1, with the highest credit earned, was an outstanding student in this field. She had won a number of honors in connection with her 4-H Club work. She has now successfully finished one year of college in the home economics department.

Table 3 shows the crediting in connection with music work in the school. The writer felt that the credits earned were in each case just a little high. Because of this, the rule for earning

credits was changed. When granting credits, it was easy to see that the students who had made the greatest contribution in music received the most credit. The student who received no credit withdrew from all music work at the middle of the year.

Two students received extra credit in agriculture. Table 4. They were definitely outstanding in the subject. They came from a progressive home and had the cooperation of their parents in the school's new program. They have both received scholarship honors in science and expect to go to college after graduation.

Table 5 shows the credits in general shop. Here is possibly the best example of a student of lower intelligence being good at hand work. The one-half extra credit was based on hours and attitude. This student has accomplished much in the practical field of electricity and shop work. He needed the extra credit in order to graduate.

The extra credit given in English III, Table 6, is an example of how test scores and attitudes may supersede the number of hours. The teacher asked to grant extra credit to student number 3, because of the high quality of work and the responsibility carried.

Two students received extra credit in foods, Table 7. Student number 1 had an unusually large number of hours. They had been earned, however, at routine work in earning her way in school and by carrying the responsibilities of the home because of the illness of her mother. Her credit was reduced below what it would have been based on hours alone. Student number 2, although with a lower I.Q., was very methodical in her work and had a good class attitude to go with her extra hours.

In giving the extra credit in general science, Table 8, the school principal allowed the student to carry over some extra hours from agriculture. This student plans to make nursing a career and put in extra time investigating and studying along that line.

General shop, Table 9, had no outstanding students. One student who was absent because of illness, brought his hours up by outside work.

It was in crediting for music, Table 10, that the music teacher expressed great satisfaction in that she felt that the credits so well expressed what the students deserved. Three of the five students who received no extra credit could have earned some had they been more positive in their attitudes.

In physical education, Table 11, credits ranged from one-half to no credit at all. Here again the variation in credits was expressive of the interest taken by the student.

There are some definite results which seem traceable to a higher level of industry under this type of program.

One of the best examples of socialized class room work was shown in the publication of the school paper. The work was done in an orderly manner, quickly, and the quality of writing and the artistic makeup of the paper seemed unusual for so small a group.

The starting and developing of a school orchestra was extraordinary. Starting in the fall of 1939 in a school where for several years there had been no instrumental music, except the piano, an orchestra was developed which in April consisted of 22 pieces and received a rating of excellent at the county music festival.

This year, 1940-'41, with only 16 students in high school but with some help from the grade students in the orchestra, the school had nine entries in the county music festival. The entries were: five vocal soloists, a girls trio, a mixed quartette, a girls glee club, and an orchestra. The ratings for these nine entries were, three superiors, five excellents, and one good.

In athletics there has been scarcely enough students to have teams, yet the boys have played through a regular basketball schedule. The girls have had a team that was undefeated in the 13 games they played during the two years. The girl tennis players have won one first and three seconds of the four events in county competition with the seven other schools.

The work in scholarship seemed unusual. Prior to three years ago, the school had no interest in scholarship tests. That year a few students were induced to enter the Emporia State Contest. They had enough success to become interested. During the last two years, nine students, at their own request, entered the state contest. Their placing in competition with schools of an enrollment of 70 or less was: four firsts, one third, one fourth, one fifth, and three honorable mentions. This meant that each student who wrote on a test was competing with from 25 to 75 of the best students from larger schools.

Outside Activities

In Tables 13 to 20 are listed the various activities engaged in by the pupils outside of the regular school hours and for which added credit was given. These lists were secured by interviewing

each student who had attended school during the two years the study was in progress. They showed a great variety of interests and in many cases revealed a close connection with the work of the home.

Since there is such a variety of activities, one might easily question the educational value of some. It is obvious that an absolute answer to the question is not possible. It is not difficult, however, to associate each one with one or more of the cardinal principles of education. A partial answer to the question may be had by studying the results of the questionnaires and interviews obtained from those most interested. These results together with statements and comments are to be found later in this study.

Table 13. List of activities engaged in outside of the regular school hours for which time was recorded on progress cards in general shop.

| Activity | No. Reporting |
|--|---------------|
| Repaired porch steps | 1 |
| Built hog fence panels | 2 |
| Built wind break for hogs | 2 |
| Worked on roof of cow shed | 1 |
| Built feed troughs | 2 |
| Helped build a brooder house | 3 |
| Helped build garage and shop | 1 |
| Rebuilt a chicken house | 1 |
| Built a public address system used at school | 1 |
| Made two chicken feeders | 1 |

Table 13 (concl.)

| Activity | No. Reporting |
|--|---------------|
| Worked on air conditioner for the home | 1 |
| Worked with father on electric wiring | 1 |
| Helped build a stock rack | 1 |
| Tore down sheep shed and made a cow shed | 1 |
| Measured and layed out tennis courts | 1 |

Table 14. List of activities engaged in outside of the regular school hours for which time was recorded on progress cards in agriculture.

| Activity | No. Reporting |
|--|---------------|
| Cared for a calf for "Calf Club" | 2 |
| Pruned shade trees in lawn | 2 |
| Built flower bed fence | 1 |
| Prepared garden for planting | 3 |
| Planted and cared for flower garden | 2 |
| Cared for strawberries and harvested them | 1 |
| Worked on school flower garden | 3 |
| Painted flower trellis | 1 |
| Cared for lawn at home | 1 |
| Ordered and catalogued agriculture bulletins | 2 |
| Collected samples of flower seeds | 1 |
| Collected insect specimens | 2 |
| Planted trees on school ground | 2 |
| Helped with tree planting at home | 1 |

Table 14 (concl.)

| Activity | No. Reporting |
|--|---------------|
| Wrote on state agriculture scholarship tests | 2 |
| Planted and cared for tulip flower bed | 1 |
| Worked on drawing for school ground planting | 2 |
| Attended livestock show at Wichita | 2 |

Table 15. List of activities engaged in outside of the regular school hours for which time was recorded on progress cards in English.

| Activity | No. Reporting |
|---|---------------|
| Art work on school paper | 3 |
| Worked on typin and stenciling for school paper | 6 |
| Secured advertising for paper | 4 |
| Printed ballots for city election | 1 |
| Printed programs for school function | 6 |
| Printed programs for churches | 2 |
| Printed programs for clubs | 1 |
| Memorized parts in school plays | 16 |
| Prepared and decorated stage for plays | 2 |
| Studied for state scholarship tests | 1 |
| Worked on school paper | 14 |
| Took part in school plays | 20 |
| Kept financial record on school publication | 2 |
| Wrote on state scholarship tests | 3 |

Table 16. List of activities engaged in outside of the regular school hours for which time was recorded on progress cards in music.

| Activity | No. Reporting |
|---|---------------|
| Practiced clarinet for orchestra and church | 1 |
| Practiced with vocal groups (trio) | 5 |
| Practiced with solo numbers for operetta | 3 |
| Worked on music practice for children's Day program | 1 |
| Practiced on saxophone for orchestra | 1 |
| Practiced piano for accompanying of operetta | 1 |
| Played for special groups for school and church | 1 |
| Practiced vocal numbers for music festival | 1 |
| Attended county music festival | 23 |
| Practiced trombone | 1 |
| Practiced piano at home | 2 |
| Practiced piano music in school book for accompanying | 1 |
| Played at church | 1 |
| Practiced trumpet | 1 |
| Prepared special church music | 2 |
| Practiced on violin | 3 |
| Sang at church | 1 |
| Took private music lessons | 1 |
| Sang in quartets | 5 |
| Practiced trombone at home | 1 |
| Extra practice with glee clubs | 15 |

Table 17. List of activities engaged in outside of the regular school hours for which time was recorded on progress cards in clothing.

| Activity | No. Reporting |
|---|---------------|
| Made a school dress at home | 2 |
| Altered and repaired clothing | 2 |
| Did embroidery work on pillow cases | 2 |
| Made mats as gifts and for sale | 1 |
| Took work home from school and worked there | 1 |
| Sewed quilt blocks | 1 |
| Worked on 4-H Club uniform | 1 |
| Did some work on formal dress | 1 |
| Wrote on state scholarship test | 1 |

Table 18. List of activities engaged in outside of the regular school hours for which time was recorded on progress cards in foods.

| Activity | No. Reporting |
|---|---------------|
| Baked and prepared dishes studied in class | 9 |
| Planned, prepared and served a supper for the county principals | 7 |
| Planned, prepared and served a Christmas dinner for the entire school | 7 |
| Prepared meals at home (without help) | 4 |
| Helped with serving of school lunches | 4 |
| Worked on making a cook book | 1 |
| Prepared a recipe file | 2 |
| Assumed care of home on week ends | 1 |
| Prepared a meal for city officials | 9 |
| Wrote on state scholarship tests | 1 |

Table 19. List of activities engaged in outside of the regular school hours for which time was recorded on progress cards in physical education

| Activity | No. Reporting |
|--------------------------|---------------|
| Practiced softball | 15 |
| Played softball games | 15 |
| Practiced basketball | 14 |
| Played basketball games | 14 |
| Practiced tennis | 14 |
| Played tennis matches | 6 |
| Took shower baths | 15 |
| Studied basketball rules | 2 |

Table 20. List of activities engaged in outside of the regular school hours for which time was recorded on progress cards in general science.

| Activity | No. reporting |
|---|---------------|
| Studied for state scholarship tests | 1 |
| Experimented in laboratory, individually | 6 |
| Made a scrap book on National Parks | 1 |
| Visited dentist and doctors | 2 |
| Visited meat lockers at refrigeration plant | 3 |
| Made weather bureau instruments | 2 |
| Microscope study work | 2 |
| Made scrap book on health | 1 |
| Made scrap book on aviation | 1 |

Table 20 (concl.)

| Activity | No. Reporting |
|--|---------------|
| Outside reading on scientific subject | 2 |
| Subscribed for "Hygeia" and read at home | 1 |
| Practiced health habits | 6 |
| Read "Popular Science" | 1 |
| Wrote on state scholarship tests | 1 |

Pupil Questionnaire Summary

In order to secure the students' reaction to the program, a pupil questionnaire was prepared. It was hoped by this method to determine whether or not, in their estimation, the plan seemed fair, was acceptable, and had any value or advantages. These questionnaires were handed to the students while they were together in the study hall at school. All were asked to fill them out at the same time and turn them in without signatures. Those who had graduated the previous year were either mailed or handed blank forms and asked to fill them out and return them as soon as possible. All of the questionnaires were returned. Table 21 is a summary of the results obtained.

Table 21. Summary of pupil questionnaire.

| | Yes | No |
|--|-----|----|
| Has this program added to your interest in the subject you were taking? | 23 | 2 |
| Has it helped to make the subject seem more practical to you? | 21 | 4 |
| Have there been times when you have been induced to put forth a greater effort, because you felt that your added effort was to be interpreted in terms of additional credit in school? | 18 | 7 |
| Do you appreciate the opportunity to record your efforts on the progress cards for the benefit of your school credit? | 25 | 0 |
| Do you as a student feel that the plan provides a more nearly fair method of granting credit than that based upon knowledge of the subject matter alone? | 21 | 4 |

The most important information revealed by the above summary is that the program met with the students' approval. Without this approval the whole program would be impossible and without value. The numbers show that the program had increased the students' interest in school and had revealed to them the practical side of the work. Seven of the 25 stated that the reward for credit had no effect upon their industry.

Patron Questionnaire Summary

The patron questionnaire, a copy of which appears in the appendix, was used as the basis of a controlled interview. This interview was held, in most cases, in the home but not in the presence of the pupil. Only in a few instances were the parents

interviewed together.

The explanation at the top of the questionnaire was read, and a yes or no answer was requested for each of the questions which followed. After the questions were answered, the parent was asked if he had any comment he wished to make. The interviewer refrained from any discussion until after the comment was made. He then took down, as nearly as possible, what was said. These statements were rewritten and appear later in this study. An informal discussion of the school program followed. A very cooperative attitude was shown by all. The four parents which were not contacted were away from home, and a lack of time prevented a return call. Only one home was completely omitted as the other two parents were from different families. The results from the parent questionnaire are given in Table 22.

Table 22. Summary of patron questionnaire.

| | Yes | No |
|--|-----|----|
| Has your child spoken to you about this plan? | 25 | 8 |
| Have you noticed that any change in the school program was in operation? | 19 | 13 |
| Has it added any to your child's interest in school? | 28 | 5 |
| Do you think that those activities engaged in by your child, outside of the regularly accepted class work, have sufficient educational value to be considered in deciding school credit? | 28 | 5 |

The answers to the first two questions indicate a lack of understanding on the part of the parents. This should be overcome in the future programs. The results obtained from the other questions show a favorable reaction on the part of the parents. The

few who did not think that the program added to their children's interest in school were possibly parents of children who said they had no added interest because of the program. The numbers in both cases are small. The parents were much impressed with the idea of including more practical activities in the work of the school. This is more or less a common demand which is being made of all schools.

Teacher Questionnaire Summary

Only five teachers used the individualized instruction programs. Four of them had only one year on which to base their judgment. The high turnover of teachers in the small high school is one of the difficulties encountered in making effective any program. These teachers were mailed or handed teacher questionnaires and asked to fill out and return them. Table 23 summarizes the results of these questionnaires.

Table 23. Summary of teacher questionnaire.

| | Yes | No | ? |
|--|-----|----|---|
| Do you feel that this program has made the school work seem more practical to the student? | 5 | 0 | 0 |
| Do you think it has broadened his conception of what an education really is? | 3 | 2 | 0 |
| Does this type of instruction add to your work as a teacher? | 3 | 2 | 0 |
| Has it created a discipline problem? | 1 | 4 | 0 |
| Do you think it is a help in solving discipline problems? | 2 | 3 | 0 |

Table 23 (concl.)

| | Yes | No | ? |
|--|-----|----|---|
| Do you feel that students are inclined to be dishonest in reporting the time on their progress cards? | 0 | 5 | 0 |
| Have you had a feeling that, in general, students have appreciated an opportunity to provide a record of their time on the progress cards? | 5 | 0 | 0 |
| Do you believe that the program has been conducive to more individual work and independent thinking? | 5 | 0 | 0 |
| Will it lower the standard of scholarship? | 0 | 5 | 0 |
| Do you believe that it might be used in courses other than those already included? | 5 | 0 | 0 |
| Could it be used in the more strictly academic subjects? | 2 | 1 | 2 |

An analysis of Table 23 shows a favorable reaction on the part of the teachers. In spite of the limited time most of them had to become familiar with the possibilities of the program, they found it to be workable and productive of some definitely desirable results. A study of the statements made by these teachers confirm the results of this summary. These statements were made as a part of their questionnaires and appear later in this study.

Statements by School Patrons

The comments made by the school patrons, referred to earlier in this study, are shown below. They are spontaneous expressions of the parents. The seven who failed to comment did so partly

because of a lack of understanding of the program and in part because of the reluctance of country people to speak out on subjects which are not in their line of work.

"It seems to me that to the good student it is a fine thing."

"I was glad to see that my daughter entered into the plan as her teachers suggested."

"The plan adds interest to this school."

"I think it is a good thing because it stirs up more interest and creates an appreciation for school."

"My boy has enjoyed and gotten more out of school."

"I think they learn to do many things that they would not if credit was not given."

"It gives the child something to work for."

"She worked hard in her garden for extra credit. She has tried out the things in cooking that she did in school. She has been interested."

"I believe that the added opportunity to work on extra time was the thing that made it possible for my boy to graduate from high school with his class."

"I believe that this type of work was not started soon enough and is not carried far enough yet."

"If a better understanding could have been had more cooperation could have been given."

"This plan encouraged my girl to a high degree of interest in the sewing course after a handicap in not having had the start that some others had."

"If the teacher is educated and takes an interest in the child it would be of benefit."

"There is a question of the fairness of a plan of this kind."

"The program has been very satisfactory. My children have benefited from it in interest in various things around home."

"My child enjoys this work and it keeps her busy."

"This plan has prevented idleness."

"The plan has prolonged my boy's interest in school and has kept him off the streets."

"It seems to have increased his interest in music both vocal and instrumental."

"I think they can learn a great many things outside of school as well as in school."

"She worked better at home and for the school. She has gotten meals and cooked more this year than ever before."

"The more you can make school combine with every day life the better."

"I believe it is like you read, that education is not all found between the pages of books. These things do deserve credit in school."

"I think that these outside things are very much worth while."

"It teaches him how things are done the same as if it were a study."

"It makes a child take more interest in those branches where they are interested."

The greatest feeling of satisfaction in making this study came from talking with the parents while securing data for the patron questionnaire. A study of the above statements will readily reveal the favorable attitude that was shown. In a number of cases the parents were very generous in their praises of the effect the program had upon their children.

Material results from the school program were indicated by flower beds, buildings, repairs, live stock, sewing, and in one instance preparation of the noon day meal by two girls who stated that their time was to be recorded on their cards for credit in foods.

Statements by Teachers

As a part of their questionnaires, the teachers were asked to make any statements they would, both favorable and unfavorable, regarding the operation of the program. All five of the teachers filled in favorable comments, and four of them found items of weakness which they mentioned. At the time the questionnaires were filled out, two of the teachers were living away from the community and were in no way connected with the school. The other three were still teaching in the system. The teachers' comments follow:

"I believe that the average student gave evidence of more enthusiasm, perseverance, care and dependability in accomplishing his work under the individualized instruction program. The program also brought out some latent talents."

"The girls are eager to record time spent on home projects."

"The plan definitely provides interest in class, creates individualized thinking on the part of the student and provides for greater amounts of laboratory work. The extra-class projects could very well become a hobby."

"It seemed to me that the plan of individual study and record keeping provided an outlet for the energetic student. I heard favorable comments from parents, especially those of children who had taken unusual interest in outside work. In ways the plan impressed upon the student the educational value of many things formerly not considered so."

"I think that the individual progress cards are very effective in the two subjects with which I am connected. To me it appears to be an inducement, especially to the industrious student, and it also provides a fair way for giving him credit on work which would probably never have been recognized under ordinary supervision. After becoming acquainted with this plan of 'Individualized Instruction', I am very much in favor of its development."

"From a limited observation I have noticed that girls judge differently the time spent on a given project. They judge, not necessarily dishonestly but differently according to values received. Some of the students considered as being more 'modern' think of it as a 'new fangled idea'."

"The program did not solve the problem of the poor student striving merely to 'get by' though the blame might not be laid altogether on the individualized instruction program. The greatest discipline problem was created by the student who needed some one to tell him constantly what to do but couldn't find work to be done on his own initiative."

"It is difficult to know just what to include on the progress card for the time."

"It required of me a great deal of explaining and advising. In a few instances I heard remarks of criticism and doubt concerning the honesty of recording time. I saw very little value to the student who was lazy or lacking in individual initiative."

An analysis of these statements indicates that the teachers were quite favorably impressed with the program. As brought out by the summary of their questionnaires, they felt that the program was helpful in stimulating the individual interests and activities of the pupils, especially of the average or better ones.

Of the unfavorable results and comments, the following things might be said. Skepticism on the part of some students was to be expected. The comment that one teacher made that the program required a great deal of explaining and advising was hardly justifiable. These are most certainly a part of the work of any good teacher. Other objections mentioned could be eliminated by careful planning with the experiences of the past two years as a guide.

One evident weakness of the program lies in its failure to provide any solution for the problems of the lazy and indifferent student. The program is built upon the idea of extra credit. The student, therefore, who is too indifferent to do satisfactorily the work necessary to earn regular credit would not be interested in securing extra credit.

CONCLUSIONS

A study of the results of a two years' trial of an individualized program of instruction in a small high school seems to warrant drawing the following general conclusions.

1. Pupils were unanimously appreciative of the opportunity to keep a record of their efforts for school credit.

2. Nearly all students indicated that it increased their interest in their school work and that it made their school work seem more practical.

3. There was definitely a considerable percentage of students who were not induced to increase their efforts because of the plan.

4. Most students believed that there was a definite degree of fairness in this method of granting credit.

5. The parents were not sufficiently informed about the plan. They did however notice the outside activities that their children were doing and were heartily in accord with them.

6. The teachers were convinced that this program made the school work seem more practical to the pupil, but that it did not especially clarify his conception of what an education really is.

7. The program adds to the teachers work, because of the necessary planning and explaining needed.

8. The teachers reported that the pupils appreciated the opportunity to use the plan and were honest in its use.

9. The teachers believed that it promoted individual work and independent thinking.

10. The program will not, in the estimation of the teachers, lower the standards of scholarship.

11. The teachers believed that the progress cards could be used in other fields of subject matter, but doubted that it could be used in all.

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APPENDIX

Blanks for Reports on
Home Activities and Assignments

REPORT ~~ON~~ ~~HOME~~ ACTIVITIES

Date _____

This is to report that _____ has completed his
work in connection with activity No. _____ which had to do with

I considered his or her response, in connection with this
activity to be: Good _____ Fair _____ Poor _____

Signed _____ Parent

HOME ACTIVITIES ASSIGNMENT

Date _____

May _____ be permitted to undertake and carry out,
for school credit, the following home activity _____

The time required for this work should be about _____ hours.

O.K. _____ Teacher Signed _____ Parent.

PATRON QUESTIONNAIRE

Individualized Instruction Program

Dear Patron: During the past two years we have been using, in the local high school, what we have chosen to call an individualized program on instruction. In connection with this program, a plan has been worked out for crediting students with many activities, outside as well as within the school, which formerly might not have been considered a part of its work.

The object of this procedure has been to try to call the pupil's attention to the fact that education does not start and stop with school, but begins in childhood and continues throughout life; and that every worth while act becomes a contributing factor in his development.

We are now endeavoring to determine whether or not this change has met the approval of the patrons of the school. If you will please answer the following questions it will be of great help to us.

Thank you,

Has your child spoken to you about our plan? _____

Have you noticed that any change in the school program was in operation? _____

Has it added any to your child's interest in school? _____

Do you think that those activities engaged in by your child, outside of the regularly accepted class work, has sufficient educational value to be considered in deciding school credit?

Please use the space below for any comment you might wish to make.

PUPIL QUESTIONNAIRE

Individualized Instruction Program

Dear Pupil: As you know, a year ago in September, we instituted what we chose to call an individualized instruction program. The conceived good was not to be for any particular class of students but it was hoped that all students would be impressed with the fact that education after all is an individual matter, and the result of individual effort. Furthermore, students should be given every opportunity possible to profit by the efforts they put forth. We are now trying to get some reaction from pupils, patrons and teachers as to the possible values derived from this type of program. If you will be so kind as to answer to the best of your ability, these few questions, by checking in the spaces provided, it will help in our evaluation of the result obtained.

Thank you,

Has this program added to your interest in the subject you were taking? Yes___ No___

Has it helped make the subject seem more practical to you? Yes___ No___

Have there been times when you have been induced to put forth a greater effort because you felt that your added effort was to be interpreted in terms of additional credit in school? Yes___ No___

Do you appreciate the opportunity to record your efforts on the progress cards for the benefit of your school credit? Yes___ No___

Do you as a student feel that the plan provides more nearly a fair method of granting credit than that based upon knowledge of the subject matter alone? Yes___ No___

TEACHER QUESTIONNAIRE

Individualized Instruction Program

Dear Teacher: I realize that you have had only a limited experience with the individualized instruction program which we are using in certain departments of our school. However, since you are one of the few that knows anything at all about the plan, I am asking that you think through carefully, the various aspects of the program, and give, through the use of the form below, an estimate of your reaction to it.

Thank you,

Do you feel that this program has made the school work seem more practical to the student? _____

Do you think it has broadened his conception of what an education really is _____

Does this type of instruction add to your work as a teacher? _____

Do you think it is a help in solving discipline problems? _____

Do you feel that students are inclined to be dishonest in reporting the time on their progress cards? _____

Have you had a feeling that, in general, students have appreciated an opportunity to provide a record of their time on the progress card? _____

Do you believe that the program has been conducive to more individual work and independent thinking? _____

Will it lower the standard of scholarship? _____

Do you believe that it might be used in courses other than those already included? _____

Could it be used in the more strictly academic subjects? _____

Teacher questionnaire (concl.)

Please make statements here of definite favorable results that you have noted.

Please note here any definite unfavorable results and comments you have had.

Sample of Outlines Made by the Instructor

PHYSICAL EDUCATION

Outline of Factual Knowledge Penelope High School Students Should Have of the Physical Education Program

1. The general technical rules of the various sports.
 - a. soft ball
 - b. basket ball
 - c. tennis
2. Reasons for having school athletics.
 - a. social
 - b. physical
 - c. mental
3. An understanding of and a regard for the human body.
 - a. bathing
 - b. clean and regular habits
 - c. prevention of diseases
 - d. knowledge and treatment of injuries
4. A definite understanding of good sportsmanship
 - a. proper respect for others
5. A general knowledge of playing equipment and facilities.
 - a. balls, bats, etc.
 - b. playing floors, fields, etc.
6. How to care for equipment.
 - a. personal
 - b. that provided by the school
 - c. that belonging to others
7. An understanding of the purpose of practice.
 - a. regularity and promptness
 - b. rules of the game
 - c. team spirit versus individual ambition
 - d. effective plays and maneuvers
 - e. controlling temperment and receiving instructions
 - f. proper mental spirit of contest
8. An understanding of the functions of the official.
 - a. interpreting rules
 - b. obligations to both teams
 - c. obligations to the audience
 - d. obligations to the sport itself
 - e. rights as a gentleman

Sample of Tests Made by the Instructor

Questions on Physical Education

Penalosa High School

Name _____ Date _____ Class _____

SOFTBALL

- F T 1. A softball diamond is a true square.
 F T 2. A ball which strikes fair but rolls foul between home and first or home and third is a fair hit ball.
 F T 3. The first baseman generally gets more "put-outs" than any other player.
 F T 4. It is the same distance between first base and second base as it is between third base and home plate.
 F T 5. The second base player needs a better throwing arm than the third base player.
 F T 6. Pitchers are often not good batters.
 F T 7. Players in outfield positions are of less importance than players in infield positions.
 F T 8. A ball driven just out of the infield is a bunt.
 F T 9. The catcher is in position to be a good field general.
 F T 10. Softball is played without gloves.
 F T 11. The pitcher should always try to "strike-out" a batter.

BASKETBALL

- F T 12. When the ball strikes an official it is out of play.
 F T 13. Basketball, when rightly played, is not a rough game.
 F T 14. One plays a better game when he or she is angry.
 F T 15. Basketball is not a strenuous game.
 F T 16. The game of basketball was invented by "Phog" Allen.
 F T 17. More high school students play basketball than any other one single sport.
 F T 18. Basketball was so named because at first baskets were used in place of hoops.
 F T 19. Ignorance of the rules does not excuse a player.
 F T 20. Good basketball requires quick and accurate thinking.
 F T 21. Starting, stopping, shooting, dribbling, pivoting, and passing are the principal fundamentals of the game.
 F T 22. It is cowardly to "foul out" intentionally.
 F T 23. To build up one's confidence in himself by winning, is the main benefit to be derived from the game.
 F T 24. One cannot commit a foul except against an opponent.

BOYS BASKETBALL (not to be answered by girls)

- F T 25. "Time out" must always be charged against one of the teams.
 F T 26. Four fouls constitute a disqualification.

Physical Education (cont.)

- F T 27. A standard quarter for a high school boys' game is eight minutes.
- F T 28. Bodily contact does not always mean that a foul has been committed.
- F T 29. A technical foul never entitles the player fouled to more than one free try at the goal.
- F T 30. Stalling for time is poor sportsmanship.
- F T 31. There are times when it would be smart basketball to pass the ball out of bounds.
- F T 32. The baskets are located ten feet above the playing floor.
- F T 33. In dribbling a player may not use first one hand and then the other.
- F T 34. If a team member makes a basket in the wrong goal it does not count.
- F T 35. Courtesy is never out of order.

GIRLS BASKETBALL (not to be answered by boys)

- F T 36. Time is not taken out for free throws.
- F T 37. Five fouls will always disqualify.
- F T 38. Stepping on a boundary line is out of bounds.
- F T 39. In dribbling a girl may take not more than three steps between the time the ball is released and when it is retrieved.
- F T 40. Too many times out constitute a foul against the captain.
- F T 41. In girls games two minutes are allowed between quarters.
- F T 42. The free throw must be attempted by the player against whom the foul is committed.
- F T 43. Pivoting is prohibited in girls basketball.
- F T 44. Players must report to the score keeper upon leaving a game.
- F T 45. A ball may bounce more than once, if given only one impetus, and be a legal dribble.
- F T 46. It is "smart basketball" to yell or wave the hands close to the eyes of a player attempting a basket.

OFFICIALS

- F T 47. In case of doubt, the official should favor the home team.
- F T 48. A good official is always right in his own mind.
- F T 49. Only a captain can call time out.
- F T 50. Most officials are honest.
- F T 51. All officials make mistakes in their decisions.
- F T 52. The referee's whistle starts and stops the game.
- F T 53. Ignorance of the rules breeds contempt for officiating.
- F T 54. Two officials are always more desirable than one.
- F T 55. Looking astounded at an official's decision is of psychological benefit to you.
- F T 56. Flaming the ball in any direction, when the official makes a decision you dislike, will make him favor you in future decisions.

Physical Education (cont.)

HEALTH

- F T 57. A hot shower should be followed by a cold rinse.
- F T 58. Preservation of health comes before the winning of games.
- F T 59. Cold packs are good for bruises.
- F T 60. One should not practice in the same clothing he expects to wear afterwards.
- F T 61. A large meal just before practice will help supply the strength needed.
- F T 62. It has been found that smoking does not shorten one's breath.
- F T 63. Young people almost never have weak hearts.
- F T 64. Tubercular condition of the lungs can be overcome by strenuous exercise.
- F T 65. Candy should be eaten only at meal time.
- F T 66. One should walk out doors to cool off when overheated.
- F T 67. Light sprains should be bandaged.

THE PUBLIC

- F T 68. An audience is always necessary in order to have a good game.
- F T 69. When a charge is made for seeing an athletic contest the audience is entitled to the guarantee of an interesting game.
- F T 70. When a charge is made for seeing an athletic contest the audience is entitled to the guarantee of the best effort of every player.
- F T 71. A good sportsman pays no attention to the crowd.
- F T 72. The audience has a right to react differently towards a professional game than it would toward an amateur one.
- F T 73. If a high school player is being unjustly razzed by the crowd it is consider proper for him to talk back.
- F T 74. We are to expect different reactions to different types of sports.
- F T 75. Coaches have a great deal to do with the reaction of the crowd.
- F T 76. The community has a great deal to do with influencing the attitude of the players.

PRACTICE

- F T 77. One should practice in order to become better than his team mates.
- F T 78. Practice always makes perfect.
- F T 79. If one is sure he can win a scheduled game, there is no need in practicing for it.
- F T 80. Most of the benefit obtained from basketball is to be obtained in the practice.
- F T 81. Disregard for regularity in practice is a mark of selfishness.

Physical Education (concl.)

- F T 82. A player's first aim in practice should be to please the coach.
- F T 83. If a player knows better than a coach he should stop the practice and tell him.
- F T 84. Practicing in athletics develops the mind.
- F T 85. If you are unable to practice because of some justifiable reason, it is not necessary to notify the coach.
- F T 86. Players staying out late on the night before a game evidence a marked respect for the coach and team.
- F T 87. All "pal relationships" should be severed during practice sessions.
- F T 88. An "all for one and one for all" attitude is necessary for a successful team.
- F T 89. Most coaches dislike to "bawl out" a player as much as the player dislikes to hear it.
- F T 90. Right or proper habits are worthy of much effort.
- F T 91. Neatness in care of personal and school equipment helps promote a cooperative and successful team.